PERSPECTIVE OF NATURAL LIQUID FABRIC SOFTENER EXTRACTED FROM KAFFIR LIME LEAVES (KALFASOF)

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Abstract

A new generation of liquid fabric softener tends to find the structural features and protect environment. These challenges need to utilize renewable natural feedstocks of vegetable oils, like kaffir lime etc. Treated kaffir lime leaves were extracted using integrated ultrasound-assisted extraction-hydrodistillation (UAE-HD) at diverse frequencies and raw material to water ratio. Esterquat 2HT-75 agent was agitated with the removed kaffir lime oil containing citronellol,etc. as essential oil (KAFLO) at various process parameters in a bath stirrer flask. The highest kaffir lime leaves-liquid fabric softener (KALFASOF) yield (83%) was found by the esterquat concentration of 2M, treatment time of 45 min. and temperature of 100^{o} C. The characteristics of the formed KALFASOF test shown cationic content (10%-20%), pH (4.9-6.4), interaction with hard water (Layer), emulsification with oil (D) and viscosity (116 cps—357.5 cps). The synthesized KALFASOF using separated plant oil by UAE-HD fulfilled the standards, and it can be a promising perspective for ecological friendly treatment carrying isolated components of sustainable materials.

Keywords:KAFLO; Essential oil; UAE-HD; Esterquat; KALFASOF.

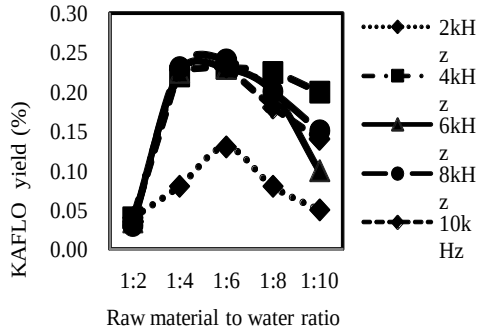

Fig.1. Raw material vs KAFLO yield.

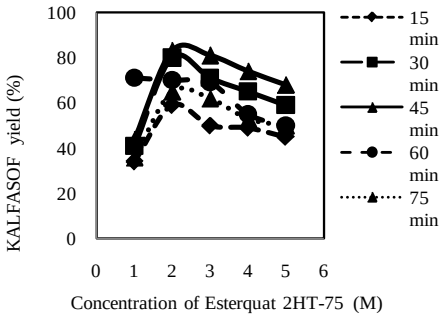

Fig. 2. Esterquat concentration vs KALFASOF yield.

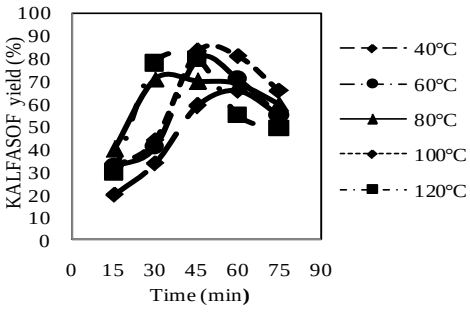

Fig. 3. Treatment time vs KALFASOF yield.

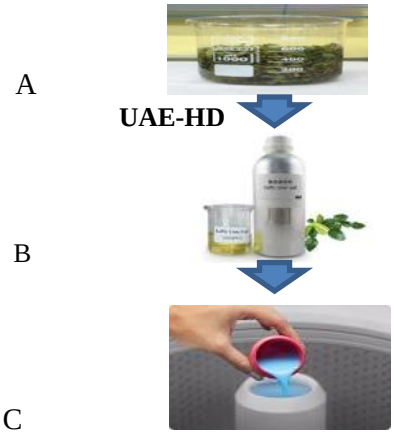

Fig. 4. A)Treated raw material. B) Extracted KAFLO. C) Resulted KALFASOF.